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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/903,100	07/11/2001	Ramesh Subramanian	GSH 08-885923	1887

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EXAMINER

NGUYEN, LOAN B

ART UNIT	PAPER NUMBER
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2126

DATE MAILED: 01/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/903,100

Applicant(s)

SUBRAMANIAN ET AL.

Examiner

Loan B Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-34 are presented for examination.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-8, 13-16, 21-28, and 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kannan et al. (5,815,702) in view of Anschuetz et al. (5,305,455).

4. As per claim 1, Anschuetz et al. teaches the invention as claimed including a method for recovering an application from a runtime fault (e.g. col. 4 line 44-47), the method comprising steps of:

receiving an exception caused due to a runtime fault in a thread (e.g. col. 4 line 26-29);

dispatching the exception to an exception handler (e.g. col. 4 line 29-35);

5. Anschuetz et al. fails to teach trapping the exception before the exception reaches the exception handler when the exception handler is a top level exception handler which terminates the application and continuing execution of the application.

Kannan et al. teaches trapping the exception before the exception reaches the exception handler when the exception handler is a top level exception handler which terminates the application (e.g. col. 4 line 44-53); and

Kannan et al. teaches continuing execution of the application (e.g. col. 7 line 34-48).

6. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Kannan et al. with Anschuetz et al. because Kannan et al. teaching of trapping the exception would improve the integrality of Anschuetz et al.'s system by giving. Kannan et al.'s system does not only trap the exception at top level application by also giving the user choices for continuing execution the application with auto fix error or terminating the application.

7. As per claim 2, Anschuetz et al. teach a step of terminating the thread that caused the exception (e.g. col. 5 line 9-16).

8. As per claim 3, Anschuetz et al. teach the dispatching step comprises step of:
determining a corresponding exception handler to which the exception is to be dispatched (e.g. col. 4 line 29-33);

dispatching the exception to the corresponding exception handler when the corresponding exception handler exists (e.g. col. 4 line 36-53);

and dispatching the exception to a top level dispatcher is the corresponding exception handler when no corresponding exception handler exists (e.g. col. 6 line 21-33).

9. As per claim 4, Anschuetz et al. teach a step of dispatching the trapped exception to a trapped exception handler (e.g. col. 4 line 29-35).

10. As per claim 5, Anschuetz et al. teach a step of terminating the thread when the trapped exception handler is not capable of resolving the trapped exception (e.g. col. 4 line 38-48).

11. As per claim 6, Kannan et al. teach continuing execution of the application after the thread is terminated (e.g. col. 2 line 63-65).

12. As per claim 7, Kannan et al. teach
translating the trapped exception into an exception which is able to be resolved by a lower level exception handler (e.g. col. 4 line 49-54), and
determining if there is a lower level exception handler which is capable of resolving the translated exception (e.g. col. 4 line 51-53).

13. As per claim 8, Kannan et al. teach terminating the thread that caused the exception when there is no lower level exception, which is capable of resolving the translated exception (e.g. col. 8 line 24-37).

14. As per claim 24, Kannan et al. teach an application recovery system for recovering an application from a runtime fault caused in a thread, the application

running under an operating system having an exception dispatcher (e.g. "dispatch Message" col. 5 line 40), one or more low level exception handlers and a top level exception handler (e.g. "the safe message loop" col. 5 line 14) which terminates the application, the application recovery system comprising:

an exception trapper placed between the exception dispatcher and the top level exception handler for trapping an exception before the exception reaches the top level exception handler (e.g. col. 4 line 44-51); and

a trapped exception handler for handling the trapped exception (e.g. col. 6 line 39-42).

15. As per claim 25, Kannan et al. teach the application recovery system recited in claim 24, wherein the trapped exception handler comprises a thread terminator for terminating the thread when there is no lower level exception handler that is capable of handling the translated exception (e.g. col. 8 line 24-37).

16. As per claim 28, Kannan et al. teach the application recovery system recited in claim 27, wherein the trapped exception handler further comprises a state restorer for restoring the state that the application was in before the fault occurred to continue the execution of the application (e.g. col. 7 line 3-5).

17. As per claims 13, 21, 33, and 34, they are program and system claim of claim 1; therefore, they are rejected for similar reasons as claim 1.

18. As per claims 22-23, it is a system claim of claim 3; therefore, it is rejected for similar reasons as claim 2-3.

19. As per claims 14-16 and 26, they are method and system claim of claim 7; therefore, they are rejected for similar reasons as claim 7-8.

20. As per claim 27, it is a system claim of claim 25; therefore, it is rejected for similar reasons as claim 25.

21. Claims 9-12, 17-20, and 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kannan et al. (5,815,702) in view of Anschuetz et al. (5,305,455) as applied to claims 1,13, 21, and 24 above, and further in view of LeVine et al. (6,591,379).

22. As per claim 9, Kannan et al. and Anschuetz et al. do not specifically teach the step of logging state information representing the state that the application was in before occurrence of the exception caused the termination of the thread.

LeVine et al. teach the step of logging state information (e.g. col. 7 line 2-7) representing the state that the application was in before occurrence of the exception caused the termination of the thread (e.g. 510, Figure 5 and col. 8 line 41-46).

23. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Kannan et al., Anschuetz et al., and LeVine et al. because LeVine et al.'s logging state information would improve the reliability of Kannan et al. and Anschuetz et al.'s system by saving all necessary information for later recovery.

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24. As per claim 10, Kannan et al. and Anschuetz et al. do not specifically teach further comprising a step of forwarding the logged information to a remote database over a computer network.

LeVine et al. teaches further comprising a step of forwarding the logged information to a remote database over a computer network (e.g. col. 7 line 5-8).

25. As per claim 11, Kannan et al. teach the step of:
receiving a recommendation from the remote database (e.g. col. 6 line 15-18);
and
informing the recommendation to the user (e.g. col. 7 line 39-44).

26. As per claim 12, LeVine et al. teach the step of forwarding a bug report to a bug report centre over a computer network (e.g. col. 8 line 1-8).

27. As per claim 30, LeVine et al. teach the application recovery system comprising a query generator for generating a query including the state information to query a recommendation from a remote database over a computer network (e.g. col. 6 line 4-7).

28. As per claims 17-20 and 29-32, they are a method and a system claim of claim 9; therefore, they are rejected for similar reasons as claim 9-11.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Loan B. Nguyen whose telephone number is

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(703) 305-0358. The examiner can normally be reached on 7:00 AM - 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (703) 305-9678. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is

(703) 305-3900.

Loan B. Nguyen
Examiner


MENG-AL T. AN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100